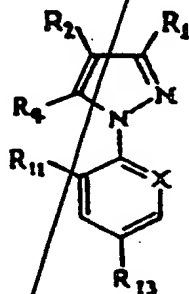


US CLAIMS

1. A method for the eradication of fleas in domestic or accommodation premises of mammals of small size, especially cats and dogs, by periodic application to the animal or the animals of the premises considered of a concentrated topical preparation for point application in an efficaciously parasitocidal quantity of a compound of formula I, or optionally of formula II, according to a monthly periodicity.

Formula I:



(I)

in which:

R₁ is CN or methyl or a halogen atom;

R₂ is S(O)_mR₃ or 4,5-dicyanoimidazol-2-yl or haloalkyl;

R₃ is alkyl or haloalkyl;

R₄ is a hydrogen or halogen atom; or an NR₅R₆, S(O)_mR₇, C(O)-R₇, C(O)O-R₇, alkyl, haloalkyl or OR₈ radical or an -N=C(R₉)(R₁₀) radical;

R₅ and R₆ independently are the hydrogen atom or an alkyl, haloalkyl, C(O)alkyl, alkoxycarbonyl or S(O)_rCF₃ radical; or R₅ and R₆ can together form a divalent alkylene radical which can be interrupted by one or two divalent heteroatoms, such as oxygen or sulphur;

R₇ is an alkyl or haloalkyl radical;

R₈ is an alkyl or haloalkyl radical or a hydrogen atom;

R₉ is an alkyl radical or a hydrogen atom;

R_{10} is a phenyl or heteroalkyl group which is optionally substituted by one or more halogen atoms or groups such as OH, -O-alkyl, -S-alkyl, cyano or alkyl;

R_{11} and R_{12} are, independently of one another, a hydrogen or halogen atom, or optionally CN or NO_2 ;

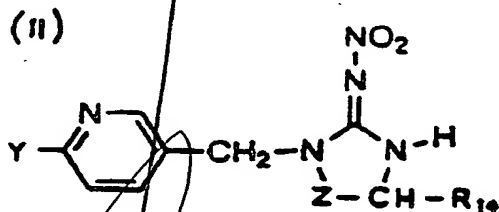
R_{13} is a halogen atom or a haloalkyl, haloalkoxy, $\text{S}(\text{O})_q\text{CF}_3$ or SF_5 group;

m , n , q and r are, independently of one another, an integer equal to 0, 1 or 2;

X is a trivalent nitrogen atom or a $\text{C}-R_{12}$ radical, the three other valencies of the carbon atom being part of the aromatic ring;

with the reservation that when R_1 is methyl, R_3 is haloalkyl, R_4 is NH_2 , R_{11} is Cl, R_{13} is CF_3 and X is N; or when R_2 is 4,8-dicyandimidazol-2-yl, R_4 is Cl, R_{11} is Cl, R_{13} is CF_3 and X is $=\text{C}-\text{Cl}$.

Formula II:



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where Y is hydrogen or halogen

R_{14} is hydrogen or methyl

and Z is $-(\text{CH}_2)_n-$ with $n = 1$ or 2.

2. Method according to Claim 1, in which in the formula I

R_1 is CN or methyl;

R_2 is $\text{S}(\text{O})_n\text{R}_3$;

R_3 is haloalkyl or ethyl

R_4 is a hydrogen or halogen atom; or an NR_5R_6 , $\text{S}(\text{O})_m\text{R}_7$, $\text{C}(\text{O})\text{R}_7$, alkyl, haloalkyl or OR_8 radical or an $-\text{N}=\text{C}(\text{R}_9)(\text{R}_{10})$ radical;

R_5 and R_6 independently are the hydrogen atom or an alkyl, haloalkyl, $\text{C}(\text{O})\text{alkyl}$, $\text{S}(\text{O})_r\text{CF}_3$ radical; or R_5 and R_6 can together form a divalent alkylene radical

which can be interrupted by one or two divalent hetero-atoms, such as oxygen or sulphur;

R_{11} and R_{12} are, independently of one another, a hydrogen or halogen atom;

5 with the reservation that when R_1 is methyl, R_3 is haloalkyl, R_4 is NH_2 , R_{11} is Cl, R_{13} is CF_3 and X is N.

3. Method according to Claim 2 in which R_1 is CN.

4. Method according to Claim 1 in which R_{13} is haloalkyl, preferably CF_3 .

10 5. Method according to Claim 1 in which R_2 is $S(O)_nR_3$ with R_3 being haloalkyl.

6. Method according to Claim 1 in which $X = C-R_{12}$, R_{12} being a halogen atom.

7. Method according to Claim 1 in which R_1 is CN,
15 R_3 is haloalkyl, R_4 is NH_2 , R_{11} and R_{12} are independently of one another a halogen atom, and/or R_{13} is haloalkyl.

8. Method according to Claim 1, in which the compound is 1-[2,6- Cl_2 -4- CF_3 -phenyl]-3-CN-4-[SO- CF_3]-5- NH_2 -pyrazole, called fipronil.

20 9. Method according to Claim 1 in which, in the compound of formula (II), $Y = Cl$, $R_{14} = H$ and $n = 1$, that is to say 1-[(6-chloro-3-pyridinyl)methyl]-4,5-dihydro-N-nitro-1H-imidazole-2-amine or imidaclopride.

10. Method according to Claim 1 in which the dose
25 of active compound is between 0.3 and 60 mg, especially between 5 and 15 mg per kilo of body weight per treated animal.

11. Method according to Claim 1 for a volume of preparation applied to the animal of the order of 0.3
30 to 1 ml, preferably 0.5 ml for cats, and of the order of 0.3 to 3 ml for dogs, as a function of the weight of the animal.

12. Method according to Claim 1, for a formulation comprising, besides the active principle itself, a
35 crystallization inhibitor, an organic solvent and an organic cosolvent.

13. Method according to Claim 1, for the preparation of a formulation in addition comprising another parasiticide.

14. Method according to Claim 13 in which this other parasiticide is chosen from the compounds mimicking juvenile hormones or chitin synthesis inhibitors.

5 15. Method according to Claim 13 in which this other parasiticide is an endectocidal parasiticide of macrocyclic lactone type, especially chosen from the group formed by the avermectins, ivermectin, abamectin, doramectin, moxydectin, the milbemycins and the
10 derivatives of these compounds.

16. Packed outfits or kits comprising one or more units of compositions for the method according to Claim 1, representing a plurality of monthly doses intended to be successively administered to an animal
15 for a long period, especially for a period of one year or for a period of one season of flea infestation.

17. Outfits or kits according to Claim 16, characterized in that they contain a plurality of different unit doses contained in as many containers of spot on
20 or pour on type.

18. Method according to Claim 1, characterized in that, when the premises contain several animals, all the animals are treated at the same time.

19. Method according to Claim 18, characterized in
25 that the treatment is carried out continuously, optionally taking account of the infestation seasons where infestation is seasonal.

20. Method according to Claim 18, characterized in that a composition prepared according to Claim 8 is
30 used.

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